



7/29/05

PTO/SB/08A (08-03)

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1

of

4

Complete if Known

Application Number	10/691,026
Filing Date	October 21, 2003
First Named Inventor	Jonathan J. Wierer Jr.
Art Unit	2811
Examiner Name	Sara W. Crane
Attorney Docket Number	LUM-03-03-02

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
SWC		US- 2002/0130311 A1	9-19-2002	Lieber et al.	
		US- 2003/0089899 A1	5-15-2003	Lieber et al.	
		US- 6,770,353 B1	8-3-2004	Mardilovich et al.	
		US- 2003/0016895 A1	1-23-2003	Holm et al.	
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		US- 2005/0051787 A1 ✓	3-10-2005	Erchak et al.	
		US- 2005/0040419 A1 ✓	2-24-2005	Erchak et al.	
		US- 2004/0207323 A1 ✓	10-21-2004	Erchak et al.	
		US- 2004/0207320 A1 ✓	10-21-2004	Erchak	
		US- 2004/0109644 A1 ✓	6-10-2004	Assefa et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
SWC		WO 2004/004927 A2	1-15-2004	BTG International		
		WO 2004/032193 A2	4-15-2004	Nanosys, Inc.		
		WO 2004/034025 A2	4-22-2004	Nanosys, Inc.		
		WO 2004/038767 A2	5-6-2004	President and Fellows		
		EP 0 874 405 A2	10-28-1998	Mitsubishi Cable Ind.		
SWC		WO 03/023857 A2	3-20-2003	Lucea Ag		

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Attorney Docket Number	LUM-03-03-02

Sheet	2	of	4
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U. S. PATENT DOCUMENTS

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)	MM-DD-YYYY			
SWC		EP 1 071 143 A1	1-24-2001	Mitsubishi Cable Ind.		

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Sheet	3	of	4	Attorney Docket Number	LUM-03-03-02

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SWC		J. RISTIC et al., "Characterization of GaN quantum discs embedded in AlxGa1-xN nanocolumns grown by molecular beam epitaxy," Physical Review B68, (2003), The American Physical Society, pp. 125305-1 to 125305-5.	
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Examiner Signature	CRANE	Date Considered	10/2005
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**INFORMATION DISCLOSURE
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Art Unit	2811
Examiner Name	Sara W. Crane
Attorney Docket Number	LUM-03-03-02

Sheet 4 of 4

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SWL		V.V. MAMUTIN, et al., "Growth of Self-Organized GaN Nanostructures on Al ₂ O ₃ (0001) by RF MBE., Proc. Int. Workshop on Nitride Semiconductors, IPAP Conf. Series 1, pp. 413 to 416.	
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		S. KITAMURA et al, "Fabrication of GaN Hexagonal Pyramids on Dot-Patterned GaN/Sapphire Substrates via Selective Metalorganic Vapor Phase Epitaxy, Jpn. J. Appl. Phys., Vol. 34 (1995), Part 2, No. 9B, 15 September 1995, pp. L1184 to L1186.	
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Examiner Signature	CRANE	Date Considered	10/2005
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PAGE 04/09

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Sheet	1	of	2
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First Named Inventor	Jonathan J. Wierer Jr.
An Unit	2811
Examiner Name	Sara W. Crane
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Sheet 2 of 2				Attorney Docket Number	LUM-03-03-02

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Examiner Signature	CRANE	Date Considered	10/20/05
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Sheet 1	1	of	1	Attorney Docket Number	LUM-03-03-02

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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SWL		M. FUJITA et al., "Organic light-emitting diode with ITO/organic photonic crystal," Electronics Letters, 27th November 2003, Vol. 39, No. 24, 2 pages.	
I		D. PISIGNANO et al., "Planar organic photonic crystals fabricated by soft lithography," Institute of Physics Publishing, Nanotechnology 15 (2004), pp. 766-770.	
I		T.N. ODER et al., "III-nitride blue and ultraviolet photonic crystal light emitting diodes," Applied Physics Letter, Vol. 84, No. 4, 26 January 2004, pp. 466-468.	
SWL		HIROYUKI ICHIKAWA et al., "Efficiency enhancement in a light-emitting diode with a two-dimensional surface grating photonic crystal," Applied Physics Letters, Vol. 84, No. 4, 26 January 2004, pp. 457-459.	

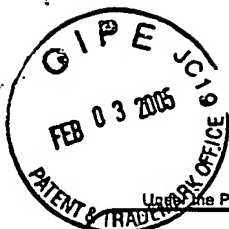
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SWC		US- 5,779,924	7-14-1998	Krames et al.	
		US- 2004/0016936 A1	1-29-2004	Tanaka et al.	
		US- 2003/0141507 A1	7-31-2003	Krames et al.	
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SWC		US- 5,955,749	9-21-1999	Joannopoulos et al.	
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SWC		JP 07176788	7-1995	Kurahashi		
SWC		EP 1 385 215 A2	1-28-2004	Nichia Corp.		

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		Filing Date	October 21, 2003		
		First Named Inventor	Jonathan J. Wierer Jr.		
		Art Unit	2811		
		Examiner Name	Sara W. Crane		
Sheet	2	of	3	Attorney Docket Number	LUM-03-03-02

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SWC		J.J. WIERER et al., "InGaN/GaN quantum-well heterostructure light-emitting diodes employing photonic crystal structures," Applied Physics Letters, Vol. 84, No. 19, May 10, 2004, pp. 3885-3887.	
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		BORODITSKY et al., "Surface recomblantion measurements on III-V candidate materials for nanostructure light-emitting diodes," Journal of Applied Physics, Vol. 87, No. 7, April 1, 2000, pp. 3497-3504.	
		BORODITSKY et al., "Light extraction from optically pumped light-emitting diode by thin-slab photonic crystals," Applied Physics Letters, Vol. 75, No. 8, August 23, 1999, pp. 1036-1038.	
		WINDISCH et al., "Light-emitting diodes with 31% external quantum efficiency by outcoupling of lateral waveguide modes," Applied Physics Letters, Vol. 74, NO. 16, April 19, 1999, pp. 2256-2258.	
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		Vuckovic et al., "Surface Plasmon Enhanced Light Emitting Diode," Journal of Quantum Electronics, Vol. 36, 2000, pp. 1-13.	
SWC		Tredicucci et al., "Single-mode surface-plasmon laser," Applied Physics Letters, Vol. 76, No. 16, April 17, 2000, pp. 2164-2166.	

Examiner Signature	CRANE	Date Considered	10/2005
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SWC		Imada et al., "Coherent two-dimensional lasing action in surface-emitting laser with triangular-lattice photonic crystal structure," Applied Physics Letters, Vol. 75, No. 3, July 19, 1999, pp. 316-318.	
		Pottage et al., "Vertical-cavity surface-emitting resonances in photonic crystal films," J. Opt. Soc. Am. A, Vol. 18, No. 2, February 2001, pp. 442-447.	
		TIWARI, S., "Compound Semiconductor Device Physics," Academic Press, Inc., San Diego, CA, 1992, pp. 182-186.	
		G.B. STRINGFELLOW and M. GEORGE CRAWFORD, eds., "High Brightness Light Emitting Diodes," Academic Press, Inc., 1997, Chapter 5, "AlGaInP Light-Emitting Diodes," by F.A. KISH and R.M. FLETCHER, pp. 149-170.	
		P.A. KOHL, "Photoelectrochemical etching of semiconductors", IBM J. Res. Develop., Vol. 42, No. 5, 5 September 1998, pp. 629-637.	
		Chen-Fu CHU et al., "Comparison of p-Side Down and p-Side Up GaN Light-Emitting Diodes Fabricated by Laser Lift-Off", Jpn. J. Appl. Phys., Vol. 42 (2003), Part 2, NO. 2B, 15 February 2003, pp. L147-L150.	
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SWC		Y.-K. SONG et al., "Resonant-cavity InGaIn quantum-well blue light-emitting diodes", Applied Physics Letters, Vol. 77, No. 12, 18 September 2000, pp. 1744-1746.	

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